CURRENT LISTING OF CLAIMS:

1. (Previously presented) A non-circular-orbit detection method, comprising:

locating first and second detectors, displaced with respect to one another, a distance from a patient;

moving the first and second detectors in a direction towards said patient until a first sensor senses a first point of said patient at a first sensing position;

storing said first sensing position;

moving the first and second detectors in a second direction from said first sensing position until a second sensor senses a second point of said patient at a second sensing position;

storing said second sensing position;

calculating a non-circular orbit about said patient using said stored first and second sensing positions; and

moving the first and second detectors in a non-circular-orbit about said patient.

2. (Original) The method of claim 1, further including determining the non-circular-orbit based on locations of said first point and said second point.

3. (Original) The method of claim 1, further including determining the non-circular-orbit based on locations of said first point, said second point and a third point on a surface the patient contacts during detection.

4. (Original) The method of claim 1, further including having said first and second detectors include nuclear medicine detectors.

5. (Original)The method of claim 1, further including locating said first and second detectors at an angle with respect to one another.

6. (Original) The method of claim 1, further including locating said first and second detectors at an angle of about 90 degrees from one another.

7. (Original) The method of claim 1, wherein said first direction is generally downward.

8. (Original) The method of claim 7, wherein said first direction is generally vertical.

9. (Previously presented) The method of claim 1, wherein said second direction is generally parallel to a front of said first detector.

10. (Original) The method of claim 1, wherein said first and second sensors emit light beams that are broken by proximity to a patient.

11. (Previously presented) A method for orbital calculation, comprising:

a) moving, relative to a patient, a first detector in a first direction toward said patient to a position adjacent to said patient based on an output of a sensor that senses patient proximity to said first detector;

b) moving, relative to the patient, a second detector in a second direction toward the patient to a position adjacent to said patient based on an output of a sensor that senses patient proximity to said second detector:

c) calculating an orbital path of said first and second detectors around the patient based upon said position adjacent to said patient in part a) and said position adjacent to said patient in part b); and

d) using said calculated orbital path to move said first and second detectors about said patient to obtain image data of said patient.

12. (Original) The method of claim 11, further including performing said moving in parts a) and b) automatically.

13. (Previously presented) An orbital-detector apparatus, comprising:

a) a first detector element to detect inside a patient;

b) a first sensor element to sense patient proximity to said first detector element;

c) a second detector element to detect inside the patient;

d) a second sensor element to sense patient proximity to said second detector element;

e) a first carrier mechanism configured to move said first detector element in a first direction from a position distal to the patient to a first position adjacent to said patient based on an output of said first sensor element;

f) a second carrier mechanism configured to move said second detector element in a second direction from a position distal to the patient to a second position proximate to said patient based on an output of said second sensor element;

g) a control unit configured to calculate an orbital path of at least one of said first detector element and second detector element around the patient based upon said first and second positions.

14. (Original) The apparatus of claim 13, wherein said orbital path is a non-circular orbit.

15. (Previously presented) The apparatus of claim 13, wherein said apparatus is a nuclear medicine imaging apparatus.

16. (Original) The apparatus of claim 13, wherein said apparatus varies a radius of said orbital path to reduce a distance of said first and second detector elements from the patient.

17. (Original) The apparatus of claim 13, wherein at least one of said first detector element and said second detector element includes a parallel-hole collimated detector.

18. (Previously presented)The apparatus of claim 13, wherein front surfaces of said first detector element and said second detector element are at an angle of less than substantially 180 degrees from one another.

19. (Previously presented) The apparatus of claim 13, wherein front surfaces of said first detector element and said second detector element are at an angle of substantially 90 degrees from one another.

20. (Previously presented) The apparatus of claim 19, wherein said first direction is substantially downward.

21. (Previously presented) The apparatus of claim 20, wherein said first direction is substantially vertical.

22. (Previously presented) The apparatus of claim 21, wherein said second direction is substantially parallel to a front of said first detector element.

23. (Original) The apparatus of claim 13, wherein said first sensor element emits a light beam that is broken by proximity to a patient.

24. (Original) The apparatus of claim 13, wherein said second sensor element emits a light beam that is broken by proximity to a patient.

25. (Previously presented) A non-circular-orbit calculator, comprising:

a) first and second detector elements arranged in a generally V-configuration with said first detector element extending along one leg of said V-configuration and said second detector element extending along another leg of said V-configuration;

b) means for moving said first and second detector elements, relatively to a patient, such that an open end of said V-configuration moves towards said patient until a sensor associated with said first detector element senses a first point of the patient;

c) means for moving said first and second detector elements, relatively to said patient, generally parallel to said one leg of said V-configuration until a sensor associated with said second detector element senses a second point of the patient;

d) means for storing positions of said first and second detector elements when said sensors respectively detect said first and second points of said patient; and

e) means for calculating a non-circular orbit about said patient based on said stored positions of said first and second detector elements.

26. (Original) The apparatus of claim 25, further including means for moving said first and second detectors in a non-circular orbit about said patient based on said first and second points.

27. (Previously presented) A method for nuclear medicine imaging with at least one nuclear medicine detector that follows a non-circular orbit, comprising:

a) automatically determining a plurality of orbital locations around a perimeter of a patient before performing image data acquisition;

b) automatically predetermining a non-circular orbit around a patient based, at least in part, upon said plurality of locations;

c) moving at least one nuclear medicine detector along said predetermined non-circular orbit around said patient for acquisition of nuclear medicine data.

28. (Original) The method of claim 27, wherein said automatically determining in a) includes determining the locations by sensing a proximity to a patient of at least two detectors which are arranged in a V-configuration during data acquisition.

29. (Original) The method of claim 28, wherein said automatically determining in b) includes calculating a non-circular orbit using a controller.

30. (Original) The method of claim 27, wherein said automatically determining in a) includes establishing at least one location based on at least one location against which the patient is supported.